

What is claimed is:

1. A magnetic recording/reproducing apparatus, comprising:
 - 5 a magnetoresistive head including a spin-valve film as a magnetic sensor element for detecting magnetic signals, said spin-valve film having a structure in which an anti-ferromagnetic layer, a pinned layer in which the direction of magnetization is pinned in a predetermined direction by an exchange-coupling magnetic field at work between itself and said anti-ferromagnetic layer, a free layer in which the direction of magnetization changes in accordance with an external magnetic field, and a non-magnetic layer for magnetically isolating said pinned layer and said free layer are layered, wherein
 - 10 magnetic signals are detected from a magnetic recording medium, which includes a tape-shaped non-magnetic substrate and a metal magnetic thin film formed thereon, while in sliding contact,
 - 15 said spin-valve film has a corrosion potential relative to a standard hydrogen electrode of +0.4. [V vs. SHE] or greater when immersed in a NaCl solution of a concentration of 0.1 mol/L,
 - 20 a product $Mr \cdot t$ of residual magnetization Mr and thickness t of said metal magnetic thin film is 4 mA to 20 mA, and
 - 25 said residual magnetization Mr is 160 kA/m to 400 kA/m.
2. The magnetic recording/reproducing apparatus according to claim 1, wherein with respect to said non-magnetic layer of said spin-valve film, the corrosion potential relative to a standard hydrogen electrode measured while immersed in a NaCl solution of a concentration of 0.1 mol/L is +0.4 [V vs. SHE] or greater.
3. The magnetic recording/reproducing apparatus according to claim 1, wherein
 - 30 said non-magnetic layer comprises one of an Au alloy or a Cu alloy,

and

5 said pinned layer and said free layer comprise one of NiFe and CoNiFe, and assuming the composition ratio of Co:Ni:Fe is b:c:d (where b, c and d represent atomic percentages), respectively, the composition ranges thereof are $0 \leq b \leq 75$, $15 \leq c \leq 95$ and $5 \leq d \leq 40$ (where $b + c + d = 100$ atomic %).

10 4. The magnetic recording/reproducing apparatus according to claim 1, wherein said magnetoresistive head is mounted on a rotary drum and detects magnetic signals by a helical scan method while in contact with a tape-shaped magnetic recording medium.

15 5. The magnetic recording reproducing apparatus according to claim 1, wherein said metal magnetic thin film of said magnetic recording medium has a surface resistivity of $1 \times 10^3 \Omega/\text{sq.}$ to $1 \times 10^9 \Omega/\text{sq.}$

20 6. The magnetic recording/reproducing apparatus according to claim 5, wherein the surface resistivity of said metal magnetic thin film is $1 \times 10^4 \Omega/\text{sq.}$ to $1 \times 10^9 \Omega/\text{sq.}$

25 7. The magnetic recording/reproducing apparatus according to claim 5, wherein said magnetoresistive head is mounted on a rotary drum and detects magnetic signals by a helical scan method while in contact with a tape-shaped magnetic recording medium.

30 8. The magnetic recording/reproducing apparatus according to claim 1, wherein a surface of said metal magnetic thin film of said magnetic recording medium has an arithmetic mean roughness Ra of 1 nm to 5 nm and a ten-point mean roughness Rz of 20 nm to 200 nm.

9. The magnetic recording/reproducing apparatus according to claim

8, wherein said magnetoresistive head is mounted on a rotary drum and detects magnetic signals by a helical scan method while in contact with a tape-shaped magnetic recording medium.